

CLAIMS

What is claimed is:

1. A method for programming a mobile telephone over the air within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said method comprising the steps of:

sending a request over the air to a mobile telephone by one of said plurality of base transceiver stations within said mobile telephone communication network to interrogate said mobile telephone's protocol capability; and

in response to a detection of said request, responding with a protocol capability response message over the air by said mobile telephone to said one of said plurality of base transceiver stations, wherein said protocol capability response message includes a BAND_MODE_CAP field describing band and mode capability information of said mobile telephone.

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2. The method according to Claim 1, wherein said BAND_MODE_CAP field further includes an analog cellular band subfield, a digital cellular band subfield, and a digital personal communication service band subfield.

3. The method according to Claim 1, wherein said BAND_MODE_CAP field is utilized to generate a preferred roaming list and a number assignment module indicator block that are specific to said mobile telephone's capabilities.

4. The method according to Claim 1, wherein said protocol capability response message further includes a NUM_SO field describing a number of service options available to said mobile telephone.

5. The method according to Claim 4, wherein said NUM_SO field further includes at least one SERVICE_OPTION field, wherein each SERVICE_OPTION field indicates a service option supported by said mobile telephone.

6. The method according to Claim 5, wherein said at least one SERVICE_OPTION field is utilized to initiate an appropriate provisioning of said mobile telephone.

7. The method according to Claim 5, wherein data from said BAND_MODE_CAP field and from said at least one SERVICE_OPTION field are sent to said customer service center for a provisioning of a home location register.

8. The method according to Claim 1, wherein said mobile telephone communication network may be an advanced mobile phone service or a code-division multiple access mobile telephone communication network.

1 9. A mobile telephone communication system for programming a mobile
2 telephone over the air within a mobile telephone communication network, said
3 mobile telephone communication network includes an over-the-air function, a
4 customer service center, a mobile switching center, a base station controller, and
5 a plurality of base transceiver stations, said mobile telephone communication
6 system comprising:

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7 means for sending a request over the air to a mobile telephone
8 within said mobile telephone communication network to interrogate said
9 mobile telephone's protocol capability; and

10 means for receiving a protocol capability response message over the
11 air sent by said mobile telephone, in response to a detection of said
12 request, to said one of said plurality of base transceiver stations, wherein
13 said protocol capability response message includes a BAND_MODE_CAP
14 field describing band and mode capability information of said mobile
15 telephone.

1 10. The mobile telephone communication system according to Claim 9,
2 wherein said BAND_MODE_CAP field further includes an analog cellular band
3 subfield, a digital cellular band subfield, and a digital personal communication
4 service band subfield.

1 11. The mobile telephone communication system according to Claim 9,
2 wherein said BAND_MODE_CAP field is utilized to generate a preferred roaming
3 list and a number assignment module indicator block that are specific to said
4 mobile telephone's capabilities.

1 12. The mobile telephone communication system according to Claim 9,
2 wherein said protocol capability response message further includes a NUM_SO
3 field describing a number of service options available to said mobile telephone.

1 13. The mobile telephone communication system according to Claim 12,
2 wherein said NUM_SO field further includes at least one SERVICE_OPTION field,
3 wherein each SERVICE_OPTION field indicates a service option supported by said
4 mobile telephone.

1 14. The mobile telephone communication system according to Claim 13,
2 wherein said at least one SERVICE_OPTION field is utilized to initiate an
3 appropriate provisioning of said mobile telephone.

1 15. The mobile telephone communication system according to Claim 13,
2 wherein data from said BAND_MODE-CAP field and from said at least one
3 SERVICE_OPTION field are sent to said customer service center for a provisioning
4 of a home location register.

1 16. The mobile telephone communication system according to Claim 9,
2 wherein said mobile telephone communication network is a code-division multiple
3 access mobile telephone communication network.

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1 17. A mobile telephone within a mobile telephone communication network,
2 said mobile telephone communication network includes an over-the-air function,
3 a customer service center, a mobile switching center, a base station controller,
4 and a plurality of base transceiver stations, said mobile telephone comprising:

5 means for receiving a request over the air from one of said plurality
6 of base transceiver stations within said mobile telephone communication
7 network to interrogate said mobile telephone's protocol capability; and

8 means for sending a protocol capability response message over the
9 air, in response to a detection of said request, to said one of said plurality
10 of base transceiver stations, wherein said protocol capability response
11 message includes a BAND_MODE_CAP field describing band and mode
12 capability information of said mobile telephone.

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1 18. The mobile telephone according to Claim 17, wherein said
2 BAND_MODE_CAP field further includes an analog cellular band subfield, a digital
3 cellular band subfield, and a digital personal communication service band
4 subfield.

19. The mobile telephone according to Claim 17, wherein said protocol
capability response message further includes a NUM_SO field describing a
number of service options available to said mobile telephone.

1 20. The mobile telephone according to Claim 19, wherein said NUM_SO field
2 further includes at least one SERVICE_OPTION field, wherein each
3 SERVICE_OPTION field indicates a service option supported by said mobile
4 telephone.

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